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SEQUENCE LISTING

TECH CENTER 1600/2900

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<120> LOCI FOR IDIOPATHIC GENERALIZED EPILEPSY, MUTATIONS
THEREOF AND METHOD USING SAME TO ASSESS, DIAGNOSE,
PROGNOSE OR TREAT EPILEPSY

<130> GOUD:023US

<140> 09/718,355

<141> 2000-11-24

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<151> 2000-11-24

<150> 60/167,623

<151> 1999-11-26

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<170> PatentIn Ver. 2.1

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Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys
325 330 335
Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val
340 345 350
Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe
355 360 365
Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp
370 375 380
Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met
385 390 395 400
Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn
405 410 415
Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
420 425 430
Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile
435 440 445
Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala
450 455 460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser
 465 470 475 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
 500 505 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser
 515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr
 530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg
 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser
 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp
 580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu
 595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln
 610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys
 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile
 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu
 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu
 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu
 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
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Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
 740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro
 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe
 770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu
 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe
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Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp
 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly
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Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu
 850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile
 865 870 875 880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val
 885 890 895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe
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Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln
 915 920 925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val
 930 935 940

Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met
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Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
 965 970 975

Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu
 980 985 990

Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
 995 1000 1005

Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val Ala
 1010 1015 1020

Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe Ile Arg
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Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp Leu Asn Asn
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Lys Lys Asp Ser Cys Met Ser Asn His Thr Ala Glu Ile Gly Lys Asp
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Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr Ser Gly Ile Gly Thr
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Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp Glu Ser Asp Tyr Met Ser
 1090 1095 1100

Phe Ile Asn Asn Pro Ser Leu Thr Val Thr Val Pro Ile Ala Val Gly
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Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu Asp Phe Ser Ser Glu Ser
 1125 1130 1135

Asp Leu Glu Glu Ser Lys Glu Lys Leu Asn Glu Ser Ser Ser Ser Ser
 1140 1145 1150

Glu Gly Ser Thr Val Asp Ile Gly Ala Pro Val Glu Glu Gln Pro Val
 1155 1160 1165

Val Glu Pro Glu Glu Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly
 1170 1175 1180

Cys Val Gln Arg Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg
 1185 1190 1195 1200

Gly Lys Gln Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu
 1205 1210 1215

His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser
 1220 1225 1230

Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile
 1235 1240 1245

Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe Ile
 1250 1255 1260

Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr Tyr Phe
 1265 1270 1275 1280

Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp Val Ser Leu
 1285 1290 1295

Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu Leu Gly Ala Ile
 1300 1305 1310

Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro Leu Arg Ala Leu Ser
 1315 1320 1325

Arg Phe Glu Gly Met Arg Val Val Val Asn Ala Leu Leu Gly Ala Ile
 1330 1335 1340

Pro Ser Ile Met Asn Val Leu Leu Val Cys Leu Ile Phe Trp Leu Ile
 1345 1350 1355 1360

Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe Tyr His Cys
 1365 1370 1375

Ile Asn Thr Thr Thr Gly Asp Arg Phe Asp Ile Glu Asp Val Asn Asn
 1380 1385 1390
 His Thr Asp Cys Leu Lys Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp
 1395 1400 1405
 Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser
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 1425 1430 1435 1440
 Ala Val Asp Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Glu Ser
 1445 1450 1455
 Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe
 1460 1465 1470
 Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
 1475 1480 1485
 Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln
 1490 1495 1500
 Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln
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 Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met Val Phe Asp
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 Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys
 1540 1545 1550
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 1555 1560 1565
 Val Thr Thr Ile Leu Ser Arg Ile Asn Leu Val Phe Ile Val Leu Phe
 1570 1575 1580
 Thr Gly Glu Cys Val Leu Lys Leu Ile Ser Leu Arg His Tyr Tyr Phe
 1585 1590 1595 1600
 Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu Ser Ile
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 Val Gly Met Phe Leu Ala Glu Leu Ile Glu Lys Tyr Phe Val Ser Pro
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 Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg
 1635 1640 1645
 Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met
 1650 1655 1660
 Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val
 1665 1670 1675 1680

Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys
 1685 1690 1695

Arg Glu Val Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn
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Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly
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Leu Leu Ala Pro Ile Leu Asn Ser Lys Pro Pro Asp Cys Asp Pro Asn
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Lys Val Asn Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser
 1745 1750 1755 1760

Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val
 1765 1770 1775

Val Val Asn Met Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
 1780 1785 1790

Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met Phe
 1795 1800 1805

Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe Met Glu
 1810 1815 1820

Phe Glu Lys Leu Ser Gln Phe Ala Ala Ala Leu Glu Pro Pro Leu Asn
 1825 1830 1835 1840

Leu Pro Gln Pro Asn Lys Leu Gln Leu Ile Ala Met Asp Leu Pro Met
 1845 1850 1855

Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr
 1860 1865 1870

Lys Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
 1875 1880 1885

Met Glu Glu Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln
 1890 1895 1900

Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val
 1905 1910 1915 1920

Ile Ile Gln Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys
 1925 1930 1935

Gln Ala Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn
 1940 1945 1950

Leu Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser
 1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro Pro
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Gly Lys Asp Glu Lys Ala Lys Gly Lys
 2005

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 <213> Homo sapiens

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 gcaaggagaa gcaatactgg gagattacag agaagaaagg aaaaaaggct gagagaaaag 180
 aggttgagga agaaatcata aatctggatt gtgagaaagt gtttaatat tagccactag 240
 atggcgatgt aatgtaagggt gctgtcttga cttttttttt ttttttttga aacaagctat 300
 ttgctgattt gtattaggta ccatagagtg aggcgaggat gaagccgaga agatactgca 360
 gaggtctctg gtgcatgtgt gtatgtgtgc gtttgtgtgt gtttgtgtgt ctgtgtgttc 420
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 aacaattgca actgaaggca cattgttatc atctcgtctt tgggtgatgc tgttcctcac 540
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 aagtttattc attccagtta ttcccttgga aaaagagtcc atggaaattc agtttgggca 660
 gagcaggaag tccatttttg tatgtgtatt cagaccaact gtccccctcc tccctctcct 720
 cctcttcttg tccccctccc cgcgcctccc tctctcaacc ttccatgaac tgaaatcagg 780
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 catctggcca 850

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 <213> Homo sapiens

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 caggacctga cagcttcaac ttcttcacca gagaatctct tgcggctatt gaaagacgca 180
 ttgcagaaga aaaggcaaag aatcccaaac cagacaaaaa aagatgacga cgaaaaatgg 240
 cccaaagcaa atagtgactt ggaagctgga aagaaccttc catttattta tggagacatt 300
 cctccagaga tgggtgtcaga gcccctggag gacctggacc cctactatat caataagaaa 360
 gtgagtgttt tttttatcag gcatattttt gctgctaatt gcctactgca ttccttggaac 420
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<210> 7
 <211> 497
 <212> DNA
 <213> Homo sapiens

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 agtttaagtg gtttatactt tcatacttct atgttgtgtt cctgtcttac agacttttat 180

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agttattgaat aaaggggaagg ccatcttccg gttcagtgcc acctctgccc tgtacatddd 240
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ttcaagtgat taatatatac ttttgtaca tgatctgtaa gcactttata gctaaatata 360
aaattaagtt gggaaatgtc catattatat aggtttcatc actctcattt tgcattcttg 420
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<210> 8
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<212> DNA
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tatccctgaa ttttggtctaa gctgcagttt gggcttttca atgttagctt tttgtaatat 180
aacacttgga ttttgatttt cttttgtgtg ttccttaaca ataacctaca ttattcagca 240
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attggacaaa gaatgtagag taagttcaac ttatattdttt aataacatat atacattygg 360
gattytgaaa ctgtgtctta atgtagtctt aaaataaaac tgaagagcat tttattaaag 420
tcattcctag acaaaattac gcagcaagag gacaatgctc attggccctc aggccctgctg 480
gcgtttatact gattatcact c 501

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<210> 9
<211> 563
<212> DNA
<213> Homo sapiens

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aaaatccatc tgcttagttt tcttttttag tatttatcta ttccactgat ggagtataa 180
gaaattggta tgctatgaaa aaacactggt actttatcaa attttttgga tgcttgtttt 240
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attctgttta gaagatttta ctttccttcg ggatccatgg aactggctcg atttactgt 360
cattacattt gcgtaagtgc ctttbytgaa actttaagag agaacatagt ttggttttcc 420
atcagtgttt atgcttttaa gaataggttt gctttacctg tagaatattt ttgtgtgatt 480
tatacattca aactctggat ttcaatttag cacaacaaag gtctaagtgg aatttcacta 540
tagcatgaag gctttgcagt agt 563

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<210> 10
<211> 253
<212> DNA
<213> Homo sapiens

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<400> 10
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agtcttgaga gctttgaaaa ctatttcggg aattccaggt aagaagtgat tagagtaaag 180
gataggctct ttgtacctac agctttttct ttgtgtcctg tttttgtgtt tgtgtgtgaa 240
ctcccgtta cag 253

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<210> 11

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<211> 340
<212> DNA
<213> Homo sapiens

<400> 11
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ggcaatgtct cggcattgag aacattcaga gttctccgag cattgaagac gatttcagtc 180
attccagggtg agagcaaggt tagataatga gacggaccca tcatgtgatt cagcatcctt 240
ctctgcttga cattcagttt tacagaaaat caggaatcat aagactaggt gttcaaagaa 300
atgattatta tgttagacat agcttatcag cctggagtta 340

<210> 12
<211> 409
<212> DNA
<213> Homo sapiens

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tgagcgtatt tgctctaatt gggctgcagc tgttcattgg caacctgagg aataaatgta 180
tacaatggcc tcccaccaat gcttccttgg aggaacatag tatagaaaag aatataactg 240
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<210> 13
<211> 266
<212> DNA
<213> Homo sapiens

<400> 13
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cgactttctt ttttcaaaca ggatatcatt atttcctgga gggtttttta gatgcactac 180
tatgtggaaa tagctctgat gcagggtgaag tcaatattgt gtgcatctgt gtatattgta 240
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<210> 14
<211> 604
<212> DNA
<213> Homo sapiens

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gaaatagatt agttacttat ttgtcaaact tttattttga aataccaaat ctttctgact 180
aggcaatc atagcatagt atcagagtaa aaaggcagca gaacgacttg taatactttc 240
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tctccattta agtaaaagta tacaagaaaa ccaattgagt tatgaaatta aaaccggatg 480
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ataacacata ctgagcagag tgatgccaaag gattgcaatt ctctccatt tcttcttggc 600

<210> 15
 <211> 378
 <212> DNA
 <213> Homo sapiens

<400> 15
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<210> 16
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 <212> DNA
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 cataataaat gttaccatgg agcaaaactaa attatctcca aaagccttca ttaggtagaa 180
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 aactgaatca accactgttg tgttatattt aaacccatcc cttcttcaca tagttatgca 780
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<210> 17
 <211> 965
 <212> DNA
 <213> Homo sapiens

<400> 17
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 taatcccaag ggctagaaac tttcttttat caaggtaatt taatttaatg tgaatgcaca 180
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 cttctacata atcttgcaaa atgaaatcac attcaaagt ccatattaat atgactctat 300
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 gagaacgact tcgcagatga tgagcacagc acctttgagg ataacgagag ccgtagagat 480
 tccttggttg tgccccgacg acacggagag agacgcaaca gcaacctgag tcagaccagt 540
 aggtcatccc ggatgctggc agtgtttcca gcgaatggga agatgcacag cactgtggat 600

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tgcaatggtg tgggttcctt gggttggtgga ccttcagttc ctacatcgcc tgttggacag 660
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atagttcagg catggctggc tctactattgc tgcaccagcc agtgtgtcta cagaacggca 780
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<210> 18
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 <212> DNA
 <213> Homo sapiens

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atgatacaat aagtcagaaa tatctgccat caccaattga atatgaaagt gcatgatgca 180
tgtgtttcat gaaattcact gtgtcaccat ttggttggtt gcttgtcata ttgctcaa 240
taattgttta atgcattagc attttttttt acaggggaaca accactgaaa ctgaaatgag 300
aaagagaagg tcaagttctt tccacgtttc catggacttt ctagaagatc cttcccaaag 360
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tctattttcg tttcaattat tttcacaaa cttatattgt ctcatttcaa acaaataat 480
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cttataatcta ctcagatatt ctagaagcct taacaattta ttttaaaatg agtgatattg 600
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641

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<210> 19
 <211> 818
 <212> DNA
 <213> Homo sapiens

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<400> 19
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ataaccttgg gaggtttaga gtaaaactgta atttttttta caagtacaaa aaaggggtgtc 180
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gtgtataaag tawacctttt ggtgggtcct tttttttttt ttcttaatct agaacttgaa 300
gaatccaggc agaaatgccc accctgtttg tataaatttt ccaacatatt cttaatctgg 360
gactgttctc catattgggt aaaagtgaat catgttgtca acctgggtgt gatggaccca 420
tttgttgacc tggccatcac catctgtatt gtcttaata ctcttttcat ggccatggag 480
cactatccaa tgacggacca tttcaataat gtgcttacag taggaaactt ggtaagcata 540
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tatttagctg gctatactct acttttttgc caaaaataat cacccttaat gtgctcaca 720
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ttttcaggat ccagaagtag ctcatagatt aagaacat
818

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<210> 20
 <211> 645
 <212> DNA
 <213> Homo sapiens

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<400> 20
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aactacaaat tgccatacaa atttaagtta gtaatagaat cattgtggga aaatagcata 180
agcattatgt tctaagagca aatcttatgt catgtatgtt attatctggg ggaattagat 240
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gttcatttcg attggtaaaa aaaaaaaaaa aaggaaccaa attcaaaaac ctttctaaca 480
ttcaggggtc ttgcatagca ttgtcatagt ttttttgcca cacaaccatt aggcattgta 540
agtttttctg taacatttgc attgtcaaaa acttttccta catgggaata attctcaatt 600
attaggttac cttagttcaa gggcwaggtc ggaaaggtaa cggtt 645

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<210> 21
 <211> 829
 <212> DNA
 <213> Homo sapiens

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<400> 21
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aaatatatat taatctttca ttttccagct gcgagatttc aagttggcaa aatcttggcc 120
aacggttaaat atgctaataa agatcatcgg caattccgtg ggggctctgg gaaatttaac 180
cctcgtcttg gccatcatcg tcttcatttt tgccgtggtc ggcatgcagc tctttggtaa 240
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gaatgacttc ttccactcck hcctgattgt gttccgcgtg ctgtgtgggg agtggataga 360
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ggatcatggg attggaaacc tagcggtagt taccacttta agatatgcac tttggaaata 480
caccagcatg gcacatgtat acatatgtaa ctaacctgca cattgtgcac atgtacccta 540
aaacttaaaag tataataaaa aaaaagagta taatttaatg gtgactgttt tgtcaaaaag 600
aaaaacaaac tatgattatt ggtttaaaag tccattacct tggatatatt atcactttaa 660
caacacagca atatabcagt gccctgcat tttttatacc aaattctatt ttgtcagtca 720
ctttatcaca ttttttatgt gaattacaat agagtatcat attgagatga gcctaaaagg 780
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<210> 22
 <211> 909
 <212> DNA
 <213> Homo sapiens

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<400> 22
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agaaatcatg tctttgtcca aggatgtgct attgagccag tcacaaattc agatcaccca 180
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tgactatctt aaagatgtaa atggaactac aagtgggata ggaactggca gcagtgttga 660
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gactgtacca attgctgtag gagaatctga ctttgaaaaa ttaaacacgg aagactttag 780
tagtgaatcg gatctggaag aaagcaaaga ggtaagattc tatagggtgtg ggtaggtatg 840
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tacttaaga 909

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<210> 23
<211> 516
<212> DNA
<213> Homo sapiens

<400> 23
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aaattcatag taataatcct tcttggcagg caacttatta ccaaaattaa ggactttact 180
ttctatgtcc atctcactta cagaaactga atgaaagcag tagctcatca gaaggtagca 240
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aaccgaagc ttgtttcact gaaggtaaag aaaagaatcc taatgttaat ctttcatttg 360
gagtgcagct tatttagctg ttggtcagct aanataaatc acatataata aaatngcact 420
ttgtaataga tataattcaa tcacctctaa tatnttgaca gacaaaaaaa cttaaagtct 480
agtgtcatgc tttgattata tctgcccaat atntgg 516

<210> 24
<211> 640
<212> DNA
<213> Homo sapiens

<400> 24
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actctaggct tagagagcta tgctagcaag acagagatga gcatagtaat aaaaagacaa 120
gacaaggaca ttgctaaagg atattatgga agcagagaca ctttatctac ttttatttca 180
acactttctg caggctgtgt acaaagattc aagtgtgtgc aaatcaatgt ggaagaaggc 240
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gatttactct ataactctat atttctggat taacttttac tatgtatgta aatataattt 540
taagaagcta atcattaatt tttgcttact attaaatagc ccagaaagtg tagcccttca 600
gcttattcat taacaccaa ggatgtgaat attcaattac 640

<210> 25
<211> 607
<212> DNA
<213> Homo sapiens

<400> 25
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ttgcgaggaa aaaaaaaaaag taacagtaac tactgtttct ctgccctcct attccaatga 180
aatgtcatat gcatatgatt aattttttta atagcttatg gagtataatt atttttgaaa 240
gctaataatg tgtaacattt tctttatagg catttgaaga tatatatatt gaycagcgaa 300
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ggctggactt cttaattggt gatgtaggta tcgttcatat ttttgtctct gttcaaggta 480
gcttgtctta tttatattca aattctacaa tagtgagtct cagaccacta tgttatgttg 540
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gggctaa 607

<210> 26

<211> 336
<212> DNA
<213> Homo sapiens

<400> 26
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attgttatta ttcytgtgtg tgcaggtttc attggtcagt ttaacagcaa atgccttggg 120
ttactcagaa cttggagcct atcaatctct caggacacta agagctctga gacctctaag 180
agccttatct cgatttgaag ggatgagggt aagaaaaatg aaagaacctg aagtattgta 240
tatagccaaa attaaactaa attaaattta gaaaaaagga aaaatgtatg catgcaaaag 300
gaatggcaaa ttcttgcaaa atgctcttta ttgttt 336

<210> 27
<211> 677
<212> DNA
<213> Homo sapiens

<400> 27
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aaagaatgga aagaccagag attactaggg gaattttttt tctttattaa cagataagaa 180
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aataacaaaa taatgacata catctattat ttagttccta agaaaaagta tatatttctt 600
tctatttaaa aaatttcaat ttgttagtac aagtttatga gccagatgg gtgaaaaactt 660
tattacatgt aaggact 677

<210> 28
<211> 457
<212> DNA
<213> Homo sapiens

<400> 28
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aaaatatttg ggaaaaagtg tgacaggtaa atattcaagc atagcaatgt ttatcagaaa 420
gatcttacta agataattca acacatgaat tattttg 457

<210> 29
<211> 379
<212> DNA
<213> Homo sapiens

<400> 29
cagaaaaaaaa aaaaatgctg acatattagt aagaataatt ttntctattg ttatgaaaaa 60
gcaccagtga cgatttccag cactaaaatg tatggtaata ttttacaaaa tattcccctt 120

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tggtagggtg aactccagcc taagtatgaa gaaagtctgt acatgtatct ttactttggt 180
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aatttcaacc agcagaaaaa gaagataagt atttctaata ttttctctcc cactgagata 300
gaaaaattat tccttggagt gttttctctg ccaaagagt acttgaattt agaacaaatg 360
ggagtatata ttataactg                                     379

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<210> 30
 <211> 393
 <212> DNA
 <213> Homo sapiens

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<400> 30
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gccatccatt ttctatttta acattgaaaa aaatgtacaa aaggacacag ttttaaccag 180
tttgattttt cttttctata ctttggaggt caagacatct ttatgacaga agaacagaag 240
aaatactata atgcaatgaa aaaattagga tcgaaaaaac cgcaaaaagg tatacctcga 300
ccaggagtaa gaagtatcaa atgatatggg ggaaaatata aaaacaaaaa ctgcatgctt 360
gtctcacaaa aaagaaaagt aagctaaaca ttt                                     393

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<210> 31
 <211> 539
 <212> DNA
 <213> Homo sapiens

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<400> 31
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aactcctttg ttgttaaaag catttctatt tctctacaga acaaatttca aggaatgggtc 180
tttgacttcg taaccagaca agtttttgac ataagcatca tgattctcat ctgtcttaac 240
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tcacattgtag gtaagaaata tttaaagttc ttaaatcag ttaaataaaa gtgaaagctg 480
aaacaatcaa gattagattc aagatcatcc cagcaatcag agataatcac tgtaaatat 539

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<210> 32
 <211> 3403
 <212> DNA
 <213> Homo sapiens

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<400> 32
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<210> 33

<211> 8349

<212> DNA

<213> Homo sapiens

<400> 33

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atcaataaga	aaacgtttat	agtattgaat	aaagggaaaag	caatctctcg	attcagtgcc	420
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35 40 45
Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
50 55 60
Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
65 70 75 80
Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
85 90 95
Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
100 105 110
Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
115 120 125
Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
130 135 140
Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145 150 155 160
Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
165 170 175
Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
180 185 190
Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
195 200 205
Asp Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
210 215 220
Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala
225 230 235 240
Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
245 250 255
Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
260 265 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
 275 280 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
 290 295 300

Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile
 305 310 315 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
 325 330 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
 340 345 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
 355 360 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
 370 375 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
 385 390 395 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
 405 410 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
 420 425 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
 435 440 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
 450 455 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
 465 470 475 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
 485 490 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
 500 505 510

Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
 515 520 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
 530 535 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
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Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
 565 570 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
 580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
 595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
 610 615 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
 625 630 635 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
 645 650 655

Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
 660 665 670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
 675 680 685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
 690 695 700

Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
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Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
 725 730 735

Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
 740 745 750

Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
 755 760 765

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
 770 775 780

Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
 785 790 795 800

Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
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Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
 820 825 830

Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
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Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
 850 855 860

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
 865 870 875 880

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
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 Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
 900 905 910
 Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
 915 920 925
 Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
 930 935 940
 Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
 945 950 955 960
 Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
 965 970 975
 Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
 980 985 990
 Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
 995 1000 1005
 Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu Phe
 1010 1015 1020
 Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu Ile Lys
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 Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile Ser Asn His
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 Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu Lys Asp Gly Asn
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 Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu Lys Tyr Val Val Asp
 1075 1080 1085
 Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr
 1090 1095 1100
 Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu
 1105 1110 1115 1120
 Glu Phe Ser Ser Glu Ser Asp Met Glu Glu Ser Lys Glu Lys Leu Asn
 1125 1130 1135
 Ala Thr Ser Ser Ser Glu Gly Ser Thr Val Asp Ile Gly Ala Pro Ala
 1140 1145 1150
 Glu Gly Glu Gln Pro Glu Val Glu Pro Glu Glu Ser Leu Glu Pro Glu
 1155 1160 1165
 Ala Cys Phe Thr Glu Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile
 1170 1175 1180

Ser Ile Glu Glu Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr
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 Cys Tyr Lys Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe
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 Met Ile Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile
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 Glu Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val
 1235 1240 1245
 Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr
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 Gly Phe Gln Val Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu
 1265 1270 1275 1280
 Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr
 1285 1290 1295
 Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg
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 Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Ala Val Val Asn
 1315 1320 1325
 Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys
 1330 1335 1340
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 Gly Lys Phe Tyr His Cys Ile Asn Tyr Thr Thr Gly Glu Met Phe Asp
 1365 1370 1375
 Val Ser Val Val Asn Asn Tyr Ser Glu Cys Lys Ala Leu Ile Glu Ser
 1380 1385 1390
 Asn Gln Thr Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn Val
 1395 1400 1405
 Gly Leu Gly Tyr Leu Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp
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 Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln
 1425 1430 1435 1440
 Pro Lys Tyr Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe
 1445 1450 1455
 Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile
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 Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile
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Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu
 1490 1495 1500

Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe
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Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe Asp Ile Ser
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Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr
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Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu Tyr Trp Ile Asn Leu
 1555 1560 1565

Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile Ser
 1570 1575 1580

Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val
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Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu
 1605 1610 1615

Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg
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Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr
 1635 1640 1645

Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly
 1650 1655 1660

Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser
 1665 1670 1675 1680

Asn Phe Ala Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn
 1685 1690 1695

Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu Phe Gln Ile Thr Thr
 1700 1705 1710

Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Gly Pro
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Pro Asp Cys Asp Pro Asp Lys Asp His Pro Gly Ser Ser Val Lys Gly
 1730 1735 1740

Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile
 1745 1750 1755 1760

Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu
 1765 1770 1775

Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu
 1780 1785 1790

Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp
 1795 1800 1805

Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu Ser Asp Phe Ala Asp Ala
 1810 1815 1820

Leu Asp Pro Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile
 1825 1830 1835 1840

Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp
 1845 1850 1855

Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met
 1860 1865 1870

Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe Met Ala Ser Asn Pro
 1875 1880 1885

Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln
 1890 1895 1900

Glu Glu Val Ser Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu
 1905 1910 1915 1920

Leu Lys Gln Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys
 1925 1930 1935

Gly Lys Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp
 1940 1945 1950

Lys Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser
 1955 1960 1965

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Arg Glu Ser Lys Lys
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Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp		
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Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys		
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Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu		
100	105	110
Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His		
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Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val		
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Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr		
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Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala		
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Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn		
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Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val		
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Asn Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala		
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Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala		
225	230	235 240
Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val		
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Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly		
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Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly		
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Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile		
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Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu		
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Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile		

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Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp		
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Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp		
370	375	380
Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr		
385	390	395
Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu		
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Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn		
420	425	430
Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln		
435	440	445
Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala		
450	455	460
Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile		
465	470	475
Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys		
485	490	495
Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu		
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Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser		
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Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser		
530	535	540
Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu		
545	550	555
Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser		
565	570	575
Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp		
580	585	590
Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg		
595	600	605
Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn		
610	615	620
Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met		
625	630	635
Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu		

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Val	Gly	Gly	Pro	Ser	Thr	Leu	Thr	Ser	Ala	Gly	Gln	Leu	Leu	Pro	Glu	
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Gly	Thr	Thr	Thr	Glu	Thr	Glu	Ile	Arg	Lys	Arg	Arg	Ser	Ser	Ser	Tyr	
		675					680					685				
His	Val	Ser	Met	Asp	Leu	Leu	Glu	Asp	Pro	Thr	Ser	Arg	Gln	Arg	Ala	
	690					695					700					
Met	Ser	Ile	Ala	Ser	Ile	Leu	Thr	Asn	Thr	Met	Glu	Glu	Leu	Glu	Glu	
705					710					715					720	
Ser	Arg	Gln	Lys	Cys	Pro	Pro	Cys	Trp	Tyr	Lys	Phe	Ala	Asn	Met	Cys	
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Leu	Ile	Trp	Asp	Cys	Cys	Lys	Pro	Trp	Leu	Lys	Val	Lys	His	Leu	Val	
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Asn	Leu	Val	Val	Met	Asp	Pro	Phe	Val	Asp	Leu	Ala	Ile	Thr	Ile	Cys	
		755					760					765				
Ile	Val	Leu	Asn	Thr	Leu	Phe	Met	Ala	Met	Glu	His	Tyr	Pro	Met	Thr	
	770					775					780					
Glu	Gln	Phe	Ser	Ser	Val	Leu	Ser	Val	Gly	Asn	Leu	Val	Phe	Thr	Gly	
785					790				795						800	
Ile	Phe	Thr	Ala	Glu	Met	Phe	Leu	Lys	Ile	Ile	Ala	Met	Asp	Pro	Tyr	
				805					810					815		
Tyr	Tyr	Phe	Gln	Glu	Gly	Trp	Asn	Ile	Phe	Asp	Gly	Phe	Ile	Val	Ser	
			820					825					830			
Leu	Ser	Leu	Met	Glu	Leu	Gly	Leu	Ala	Asn	Val	Glu	Gly	Leu	Ser	Val	
		835					840					845				
Leu	Arg	Ser	Phe	Arg	Leu	Leu	Arg	Val	Phe	Lys	Leu	Ala	Lys	Ser	Trp	
	850					855					860					
Pro	Thr	Leu	Asn	Met	Leu	Ile	Lys	Ile	Ile	Gly	Asn	Ser	Val	Gly	Ala	
865					870					875					880	
Leu	Gly	Asn	Leu	Thr	Leu	Val	Leu	Ala	Ile	Ile	Val	Phe	Ile	Phe	Ala	
				885					890					895		
Val	Val	Gly	Met	Gln	Leu	Phe	Gly	Lys	Ser	Tyr	Lys	Glu	Cys	Val	Cys	
			900					905					910			
Lys	Ile	Ser	Asn	Asp	Cys	Glu	Leu	Pro	Arg	Trp	His	Met	His	Asp	Phe	
		915					920					925				
Phe	His	Ser	Phe	Leu	Ile	Val	Phe	Arg	Val	Leu	Cys	Gly	Glu	Trp	Ile	
	930					935					940					
Glu	Thr	Met	Trp	Asp	Cys	Met	Glu	Val	Ala	Gly	Gln	Thr	Met	Cys	Leu	

945	950	955	960
Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn			
	965	970	975
Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala			
	980	985	990
Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly			
	995	1000	1005
Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu Phe			
	1010	1015	1020
Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu Ile Lys			
	1025	1030	1035
Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile Ser Asn His			
	1045	1050	1055
Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu Lys Asp Gly Asn			
	1060	1065	1070
Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu Lys Tyr Val Val Asp			
	1075	1080	1085
Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr			
	1090	1095	1100
Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu			
	1105	1110	1115
Glu Phe Ser Ser Glu Ser Asp Met Glu Glu Ser Lys Glu Lys Leu Asn			
	1125	1130	1135
Ala Thr Ser Ser Ser Glu Gly Ser Thr Val Asp Ile Gly Ala Pro Ala			
	1140	1145	1150
Glu Gly Glu Gln Pro Glu Val Glu Pro Glu Glu Ser Leu Glu Pro Glu			
	1155	1160	1165
Ala Cys Phe Thr Glu Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile			
	1170	1175	1180
Ser Ile Glu Glu Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr			
	1185	1190	1195
Cys Tyr Lys Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe			
	1205	1210	1215
Met Ile Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile			
	1220	1225	1230
Glu Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val			
	1235	1240	1245
Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr			

1250	1255	1260
Gly Phe Gln Val Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu		
1265	1270	1275 1280
Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr		
	1285	1290 1295
Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg		
	1300	1305 1310
Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Ala Val Val Asn		
	1315	1320 1325
Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys		
	1330	1335 1340
Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala		
	1345	1350 1355 1360
Gly Lys Phe Tyr His Cys Ile Asn Tyr Thr Thr Gly Glu Met Phe Asp		
	1365	1370 1375
Val Ser Val Val Asn Asn Tyr Ser Glu Cys Lys Ala Leu Ile Glu Ser		
	1380	1385 1390
Asn Gln Thr Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn Val		
	1395	1400 1405
Gly Leu Gly Tyr Leu Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp		
	1410	1415 1420
Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln		
	1425	1430 1435 1440
Pro Lys Tyr Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe		
	1445	1450 1455
Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile		
	1460	1465 1470
Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile		
	1475	1480 1485
Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu		
	1490	1495 1500
Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe		
	1505	1510 1515 1520
Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe Asp Ile Ser		
	1525	1530 1535
Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr		
	1540	1545 1550
Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu Tyr Trp Ile Asn Leu		

1555	1560	1565
Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile Ser		
1570	1575	1580
Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val		
1585	1590	1595 1600
Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu		
	1605	1610 1615
Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg		
	1620	1625 1630
Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr		
	1635	1640 1645
Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly		
	1650	1655 1660
Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser		
1665	1670	1675 1680
Asn Phe Ala Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn		
	1685	1690 1695
Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu Phe Gln Ile Thr Thr		
	1700	1705 1710
Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Gly Pro		
	1715	1720 1725
Pro Asp Cys Asp Pro Asp Lys Asp His Pro Gly Ser Ser Val Lys Gly		
	1730	1735 1740
Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile		
1745	1750	1755 1760
Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu		
	1765	1770 1775
Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu		
	1780	1785 1790
Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp		
	1795	1800 1805
Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu Ser Asp Phe Ala Asp Ala		
	1810	1815 1820
Leu Asp Pro Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile		
1825	1830	1835 1840
Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp		
	1845	1850 1855
Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met		

1860	1865	1870
Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe Met Ala Ser Asn Pro		
1875	1880	1885
Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln		
1890	1895	1900
Glu Glu Val Ser Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu		
1905	1910	1915
Leu Lys Gln Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys		
	1925	1930
Gly Lys Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp		
	1940	1945
Lys Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser		
	1955	1960
Thr Thr Ser Pro Pro Ser Tyr Asp Ser Val Thr Lys Pro Glu Lys Glu		
	1970	1975
Lys Phe Glu Lys Asp Lys Ser Glu Lys Glu Asp Lys Gly Lys Asp Ile		
1985	1990	1995
		2000
Arg Glu Ser Lys Lys		
	2005	

<210> 37
 <211> 912
 <212> DNA
 <213> Homo sapiens

<400> 37
 gaattcttta tatgggttga atgactttct gacatagcaa ataaaaagca tgaggagaag 60
 cattatctgt taacaaaatt aacacttaaa atcaacaaag ttttaatggt tcgttccaag 120
 aaaagcctgt ggaagatcag ttccacaact gagagctttg ggctgcttca gacatatgtc 180
 tgtgtgtacg ctgtgaagggt gtttctcttc acagttcccc gccctctagt ggtagttaca 240
 ataatgccat tttgtagtcc ctgtacagga aatgcctctt cttacttcag ttaccagaat 300
 ccttttacag gaagttagggt gtggtctttg aaggagaatt aaaaaaaaaa aaaaaaaaaa 360
 aaaaaagatt tttttttttt taaagcatga tggaatttta gctgcagtct tcttggggcc 420
 agcttatcaa tcccaaactc tgggggtaaa agattctaca ggggtaaatgt tttattattc 480
 ttattatgct tattctctgt gatgcttctc tacctttaca gtagtagaat ccttggggaa 540
 atctgcagag ggaccacttt cattttgaag ctgctggctg catgttttag catgtctctt 600
 ctattagaga atccaggcat ggcagtttcc tccccagtg tgcaaggacc atcttcatgc 660
 ctatgtctgt cgctaggcat gaggtctctt aggaatgggt gaaaaaaatg agggatgttt 720
 tggaggcact ataatactgg ggagggcagt ctgctagctg gtagctgaaa ggtcctgggt 780
 tacttcaaca ttttttttaa ataaaactgt gcagtagttt ttgttatttt agggttccct 840
 ctgttttatc tgggtgatgc tgcagaagtg aactgcataa cacatttcac tcttagaaat 900
 gcattccata ta 912

<210> 38
 <211> 722
 <212> DNA

<213> Homo sapiens

<400> 38

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ctcagtgcac gtaactgaca caatcacctc tatctaattg tcatgcttct tacctcctgt 60
tctgtagcac tttcttatgc aaggagctaa acagtgatta aaggagcagg atgaaaagat 120
ggcacagtca gtgctggtac cgccaggacc tgacagcttc cgcttcttta ccagggaatc 180
ccttgctgct attgaacaac gcattgcaga agagaaagct aagagaccca aacaggaaacg 240
caaggatgag gatgatgaaa atggcccaaa gccaaacagt gacttggaag cagsaaaaatc 300
tcttccattt atttatggag acattcctcc agagatgggt tcatgcccc tggaggatct 360
ggacccctac tatatcaata agaaagttag ttcttagtca agttgccttc actgcctatt 420
tactaattgg ttctgggcta gtcccaggga tgatgggtgaa gaaggctggc ctccttcctt 480
ctgtctaaag tatcactaag atgctggatg ggccctgacc tgtaatggac caatgatcct 540
agaagtcttt tggaagcact catttgaacc tgcatttgtg agacaggcag agaactggtg 600
aggcatcctc cagcgcgaggg attaaggaag gacaaaagcc tattcacctt cttgaatata 660
aattatatgc ttaaacacgt gtaaattgac cctgattccc taataatgtt gagaagcaaa 720
aa 722
```

<210> 39

<211> 561

<212> DNA

<213> Homo sapiens

<400> 39

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cctatggcat tgatcacaaa ttttcttaat aatcctcatg tcatttatca aatttaggaa 60
agtttatagt gctcagaaaa aaaaagcatc tatcttcatg tcatatgatg gtaattatta 120
tggtatacac tattttacag ggcaatatat ataaataatg gttttacttt tctcttaaaa 180
tattcttaat atatatctta agttttgttt tatgtgttgt gttttctttt tcagacgttt 240
atagtattga ataaagggaa agcaatctct cgattcagtg ccacccctgc cctttacatt 300
ttaactccct tcaaccctat tagaaaatta gctattaaga ttttgggtaca ttcatatcct 360
ttttcaaacc gtcacttaat atgattttct tctttgacca agttattgag ctacacattt 420
tccaaaatat ctgtggttgg caatgttatg tgttctttct ttttctttcc ttttactcaa 480
tcgttagcat gttgcaaaat gagatcacag gtaagtgaat tactttcccc cgtcttctaa 540
tggtttcttc tctacccaac t 561
```

<210> 40

<211> 510

<212> DNA

<213> Homo sapiens

<400> 40

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acctaaatag cctcaaaaata gttgatggct tggcctgaag acaagatcta aatatgaggt 60
tgctgagtta tagaaatggc aaaaaaaagg gtcaataata gaataataag caacaaaata 120
atagtaagca ctaaagtttt aaacttcatg gtggtgaagg catggtagtg cataaaaagta 180
agatttttcc attgaacttt gtcttccttg acgatattct actttattca atatgctcat 240
tatgtgcacg attcttacca actgtgtatt tatgaccatg agtaaccctc cagactggac 300
aaagaatgtg gagtaagtat aaatattttt caatattgac ctccctttat gtttcatatt 360
gtgcttttaa caccttgaga cctcctcaat ttctttaaca aatcatgcta gctactgtta 420
accagaccct gattcaaat catttctgtc actaaatgtc ttctaggaca aagcttgtag 480
tgggctcact tagttgtgta aattactgca 510
```

<210> 41

<211> 370

<212> DNA

<213> Homo sapiens

```

<400> 41
taagatatgt acttgtaaat taaccactag atttttaatg tgagcttggc tattgtctct 60
caggatatacc tttaacaggaa ttataacttt tgaatcactt attaaaatac ttgcaagggg 120
cttttgttta gaagatttca cttttttacg ggatccatgg aattgggttg atttcacagt 180
cattactttt gcgtaagtat ctttaatacat tttctatcct ggaagagtaa atcactggtg 240
ggagcctata ctatatatttc cttggtggct tgcccttgaca gaccaagcat ttntcttagt 300
aatcatagtt ttcttccaat caaattatcc agtttggaga aattaggaac tatcatagta 360
aattacatgg                                     370

```

```

<210> 42
<211> 370
<212> DNA
<213> Homo sapiens

```

```

<400> 42
caattagcac tgtaaagtaa taaagtttcc caaataacag agattatgat tgatgacaat 60
gccattttcc tcttaattgg gaaagctgat ggcgacactc atgaaattaa aaaggctctg 120
atgaaagacc aangaagacg tagatttccc taaattctga ataactctga tttaattcta 180
caggtagtga acagaatttg taaacctagg caatgtttca gctcttcgaa ctttcagagt 240
cttgagagct ttgaaaacta tttctgtaat tccaggtaag aagaaaatgg tataagggtg 300
taggcccctt atatctccaa ctgtttcttg tgttctgtca ttgtgtttgt gtgtgaaccc 360
cctattacag                                     370

```

```

<210> 43
<211> 410
<212> DNA
<213> Homo sapiens

```

```

<400> 43
gtaagaagaa aatggtataa ggtggtaggc cccttatatc tccaactggt tcttggtgtc 60
tgtcattgtg tttgtgtgtg aacccctat tacagatatg tgacagagtt tgtggacctg 120
ggcaatgtct cagcgttgag aacattcaga gttctccgag cattgaaaac aatttcagtc 180
attccagggt agagctagggt taaacaccga ggctgacttt agctacagtg gtgctacaat 240
cacagctttt gtgcagaagc cttgttgcta gttgcatatt gcaaataaat atgtaaaaaa 300
gcaagaattg gtacatcatt ttttggtagg atttgattct ttgcttttta cccgttgctt 360
tctttaaaac tattctaaat cagcctttga gtttaacaag tgttgcatga 410

```

```

<210> 44
<211> 1066
<212> DNA
<213> Homo sapiens

```

```

<400> 44
aaagagtgtt tggaaatata catttggttc atttccattc acagttttct aatgaacata 60
caagttctgc tttcattcat tttcaccagc tagtaggctt ttcataaaaa tgttattcaa 120
tcacaaacat taaactaata ttgttggcat tctgcatgac atttttatct tccaggccaa 180
gctcatgata tttttgccgg taaaatagct gttgagtagt atatttaant tcccccttct 240
gattttgttt gtaggcctga agaccattgt gggggccctg atccagtcag tgaagaagct 300
ttctgatgtc atgatcttga ctgtgttctg tctaagcgtg tttgcgctaa taggattgca 360
gttgttcatg ggcaacctac gaaataaatg tttgcaatgg cctccagata attcttcctt 420
tgaaataaat atcacttctt tctttaacaa ttcattggat gggaatggta ctactttcaa 480
taggacagtg agcatattta actgggatga atatatagag gataaaaagta agatatactc 540
tataaacat taagttgttt agttctctaa atattaaata ttatatataa tggaaattat 600

```

```

ctcaatttag atgtgaatca agtgacttag actaatttaa gatgatttaa tacatataaa 660
agagatatca aaggatacct tattctatct ttsttatctg tccattgata tagtaaaagt 720
tctcatttga aaatgtgttg tcttatactc atgttgaaag taatttcata ttatgccata 780
ttaaaaaagg tttatttggt agacattaat cagggttttcc agtcatttta ataaataagt 840
cagtagtttg aactattcmg cgtattccac tgaaatgtcg ttaagaagac tgaggggaaa 900
taatttggcc ctatttggtt gatgcaacat atgtattgag tacatatgct atatctgaaa 960
ctagagaaac catttatcaa gatgaaataa gaatttgtgt gtcctcaga aggttaagta 1020
acctgattt agccattcac ttcattccata ttctaattag tccctt 1066

```

<210> 45
 <211> 385
 <212> DNA
 <213> Homo sapiens

```

<400> 45
gttcaattat tgtgaaaaat cttcttttagc catatatatt tattagttta tccatctcat 60
tatgattgaa aacatttggt agctttgcca cctaaacagg gtggctgaag tgttttacag 120
gattttaatg attcttttcta ttcctttctc tttaaataagg tcacttttat tttttacagg 180
ggcaaaatga tgctctgctt tgtggcaaca gctcagatgc agggtaagtg tatgcttcct 240
actgagtttc agtccacact gctccatcag tgtcaataac ctgccacctc ccaactcatcc 300
agtcccacca ctccctactc aaaaccctcc ataaattcta cttcacggtg actctcagaa 360
tgaccaggat aagtgtagat tctca 385

```

<210> 46
 <211> 430
 <212> DNA
 <213> Homo sapiens

```

<400> 46
tataataatg acaattatga atcacagagg aatccacaaa gtagacctta tagattctgt 60
cattatataa atcagtcac ttagtgctga gttaagtact gggtaagggtg agagaaatcg 120
gcttttttct agtgcctgta taaaacagac attggcatat attaaaacag gaaaaccaat 180
tagcagactt gccgttattg actycctctc tttcctctaa cctaattaca gccagtgtcc 240
tgaaggatac atctgtgtga aggctggtag aaaccccaac tatggctaca cgagctttga 300
cacctttagt tgggcctttt tgtccttatt tcgtctcatg actcaagact tctgggaaaa 360
cctttatcaa ctggtgagaa cagataaaat catttttctg agaatcataa aacaccgaac 420
tcaagagaat 430

```

<210> 47
 <211> 646
 <212> DNA
 <213> Homo sapiens

```

<400> 47
tgctgtagaa tattttatta cttagagtgt aagtttgtaa catcctatat aaaatttatt 60
aaaatctctc ttccattttg cagacactac gtgctgctgg gaaaacgtac atgatatttt 120
tttgctggtt cattttcttg ggctcattct atctaataaa tttgatcttg gctgtggtgg 180
ccatggccta tgaggaacag aatcaggcca cattggaaga ggctgaacag aaggaagctg 240
aatctcagca gatgctcgaa cagttgaaaa agcaacaaga agaagctcag gtatagtga 300
caagcatatg gtcctttggt tttctgtatc taaattcttt aacctaaatg ttgaggtcag 360
tggcaaggta gttgacatta gaaataggct atatgtgttt ggtaagtgtt aggagcctgt 420
ttggttatta agaagttatt actttattgc aatgatctct gtcaatagtg tcaatagtaa 480
tggcatcaaa aaatggataa ttataattgc tttactgaca tttttttctc ccttgtgact 540
ccttgaggaa attaatgatt aacaaaggcc tcatgtactc aaacttgcag agtagataaa 600

```

cctacatgtc ctcagttgaa gtattttctt aggggaagag gaattc

646

<210> 48
<211> 711
<212> DNA
<213> Homo sapiens

<400> 48
tatgtatcat cttccatatt aatgcgcatt ttactctttg attggtctaa taacagtgtg 60
ctgtgttcta aaacacagaa taaaatggag aattgttttt caagattatc ttcattgat 120
tgaagctcaa ttaagcagta acatgataat tattttttta gatnatatgc aacttcccac 180
atacttttgcg cccttctagg cggcagctgc agccgcattc gctgaatcaa gagacttcag 240
tggtgctggt gggataggag ttttttcaga gaggctctca gtagcatcta agttgagctc 300
caaaagtga aaagagctga aaaacagaag aaagaaaaag aaacagaaaag aacagtctgg 360
agaagaagag aaaaatgaca gaggcctaaa atcggaatct gaagacagca taagaagaaa 420
aggtttccgt ttttccttgg aaggaagtag gctgacatat gaaaagagat tttcttctcc 480
acaccaggtt aaaaatattaa attacatgaa ttgtgttctc ataaattttt taaaagaata 540
tgccagaatt taatggagag aaaaccgcct tccacctgga tggcacaatg ctttcagagt 600
agtgatgatt atcaagtgtt ttggctatca cttcagagaa tttgtgagtt ttgcaacttt 660
ttggaatccc aggaaggaaa ttttagatcc ctctgggttt ggaaaaattt g 711

<210> 49
<211> 1026
<212> DNA
<213> Homo sapiens

<400> 49
ttatggggac acttctgact atgttgaggt gtgggtaaag taggagaaaa gagagcagaa 60
gatggaaaaat ggaggaagga gaaaaagcga gaggtaaata gaaaagggtg accttgtaga 120
aagtgccaaa atgccaccag cagtcacag aggggtgctt tcttccacat gtccaatgac 180
ttatccttga gtaagtcaat gactatgaca caatgaatca aattctgttt ttcagaatgc 240
cagctcttaa ctctcttcat ctcatttttg tttcttttct tgttattcat agtccttact 300
gagcatccgt ggctcccttt tctctccaag acgcaacagt agggcgagcc ttttcagctt 360
cagaggtcga gcaaaggaca ttggctctga gaatgacttt gctgatgatg agcacagcac 420
ctttgaggac aatgacagcc gaagagactc tctgttcgtg ccgcacagac atggagaacg 480
gcgccacagc aatgtcagcc aggccagccg tgccctcagg gtgctcccca tctgccccat 540
gaatgggaag atgcatagcg ctgtggactg caatgggtgtg gtctccctgg tcggggggccc 600
ttctaccctc acatctgctg ggcagctcct accagaggtg aggcccaacy magattgcag 660
ctgatgtgaa gagagtgtg actggtgcag gcaggaggtg ttttccattt mcacatctaa 720
gaatttkttg agtttsttgc ccaaaggctg ggagtttgtt caatcaagct gtttaactgtc 780
ttgtgaaact sttctattca gacttityct caaagtaatt aaaaacctag gttggctgtc 840
agagaatata attagamgtm atctttcatc ayyattacta tggatatgaa ctcgccaaaa 900
agcaaagcaa caatttatca agcataatgt tygaytaata tagttaaatt aaatccaagg 960
aaattaatgc tcacaaatta aataaatact taaggatttt gtgattgttg ttcattttaa 1020
aggaga 1026

<210> 50
<211> 601
<212> DNA
<213> Homo sapiens

<400> 50
ataggaaagc ccaccttgac aaaccaggg ctccccaaaa gctgaaaatc tgacagactt 60
taaacaaccc ccaataaatt atcattccaa caatatctta gtgagctttt tacatctgag 120

```

aaagcatggg gtatatattag ttaaataaca cctggtgtag gaatgctttg ggctttgctg 180
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agaaataaga aagagacggg ccagttctta tcatgtttcc atggatttat tggaagatcc 300
tacatcaagg caaagagcaa tgagtatagc cagtattttg accaacacca tggaaggat 360
gttaaaagtc ctgcgtcaca gttacttggt gctttcctaa tgatgaaaaa cacttcataa 420
atttcaataa aatacttcct gacttgatat tgtatcatta ttacacattt tactaaataa 480
cagtaaaatc cgtgcataac tcatggattc atatattcca cagatttttt ttttttatat 540
ttagcctgta gaaagctgct gcaaagttaa ggtatatattg aacaccactt tcataactta 600
a                                                                 601

```

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<210> 51
<211> 645
<212> DNA
<213> Homo sapiens

```

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<400> 51
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ttttttcttc cagaacttga agaattcaga cagaaatgcc caccatgctg gtataaattt 240
gctaatatgt gtttgatttg ggactgttgt aaaccatggg taaagggtgaa acaccttgct 300
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acactcttca tggctatgga gcactatccc atgacggagc agttcagcag tgtactgtct 420
gttggaacc tggtaagcct cactgagagt ttctcttcct cttgaaagag tttataattg 480
ccttagtgaa ttttacatat tgctctcaaa ttaaataatca actaattggc catgtatatc 540
ttgacatcaa atgttttagca tcccttttaa ataacaaaaa aatgttgcta ccatagtgca 600
aaagagtcaa agaatttatg tacaatttga tttagaattg aattt 645

```

```

<210> 52
<211> 485
<212> DNA
<213> Homo sapiens

```

```

<400> 52
tgccccaaac caatttttaa atcaggaatt taatttwtat attgttgagg gttaaattaa 60
gttgctcaat aattattcgt gtttcaakas tatttgctca tataatgaac tacacttctc 120
atttaggtct tcacagggat cttcacagca gaaatgtttc tcaagataat tgccatggat 180
ccatattatt actttcaaga aggctggaat atttttgatg gttttattgt gagccttagt 240
ttaatggaac ttggtttggt aaatgtggaa ggattgtcag ttctccgac attccggctg 300
gtaaattaaac tgggagtgtt cataaaatgt actttrtaat taattagtct tcattctcat 360
ctagtaaaaa tggcaagatt tcccatcatt ataatatatt tgaatacctt ctaaaacaga 420
ttggattgcc ataccaccaa atggttagttt cttcttcac atagctttta taaagttcac 480
ttaa 485

```

```

<210> 53
<211> 602
<212> DNA
<213> Homo sapiens

```

```

<400> 53
acagatttcc tctgtgtgcc atgtgactaa cccattgtgc acatgtaccc taaaaattag 60
tatataataa taaaaataaa taaaaataaa aataaaaaaa taaaaataaa ataaaattgc 120
agattttttt agaaatgcag agattaacac tgttcttgct tttatttcca gctccgagtt 180
ttcaagttgg caaatcttg gccaaactcta aatatgctaa ttaagatcat tggcaattct 240

```

```

gtgggggctc taggaaacct caccttggtg ttggccatca tegtcttcat ttttgctgtg 300
gtcggcatgc agctctttgg taagagctac aaagaatgtg tctgcaagat ttccaatgat 360
tgtgaactcc cacgctggca catgcatgac tttttccact ccttcctgat cgtgttccgc 420
gtgctgtgtg gagagtggat agagaccatg tgggactgta tggaggtcgc tggccaaacc 480
atgtgcctta ctgtcttcat gatggtcatg gtgattggaa atctagtggg atgtagcaaa 540
aacattttcc tcattttcat taaaaataat gtaatcatta aaaagtgttc aactgaagaa 600
ta                                                    602

```

<210> 54
 <211> 803
 <212> DNA
 <213> Homo sapiens

```

<400> 54
gtttcattta gcaatgattt cagtattttc tgcaatgact aataagcaaa tagtgataat 60
agtattattt tatattgacc aagcattttt atttcattca ctttttttca gaatagtgtg 120
tcatgaatta gcagaaatgc atgttagaat aaaataaggt gtcaagaaca atcttagaaa 180
actaatgatg gaaagcaatt gaagcaatag aatgttttga tcacctgttt ttctgtctgt 240
gtttcagggt ctgaacctct tcttgccctt gcttttgagt tccttcagtt ctgacaatct 300
tgctgccact gatgatgata acgaaatgaa taatctccag attgctgtgg gaaggatgca 360
gaaaggaatc gattttgtta aaagaaaaat acgtgaattt attcagaaag cctttgttag 420
gaagcagaaa gcttttagatg aaattaaacc gcttgaagat ctaaataata aaaaagacag 480
ctgtattttc aaccatacca ccatagaaat aggcaaagac ctcaattatc tcaaagacgg 540
aaatggaact actagtggca taggcagcag tgtagaaaaa tatgtcgtgg atgaaagtga 600
ttacatgtca ttataaaca accctagcct cactgtgaca gtaccaattg ctggtggaga 660
atctgacttt gaaaatttaa atactgaaga attcagcagc gagtcagata tggaggaaaag 720
caaaggagta aaatgttaaa taaggagata ttttggtgta tataatctgt gttaaatatc 780
aggtgtttta tgcgtgtctc tgt                                                    803

```

<210> 55
 <211> 615
 <212> DNA
 <213> Homo sapiens

```

<400> 55
atctctatac taggctcaaa cagaagttat ttccgttggt agcaccatat ttttaaaaga 60
aaaaaaaaata ctatggtggt gtatctaata ttgtgacccc tgacctttac caaagcggat 120
tggcattatg ttttaagttct taattacaga tcaagaaaaa tgcatacaga agatgggggg 180
gggcacacct aattaatttt tatattttaga ttaaagaaaa taattaaatg tgtttttttg 240
tgggattgat tttcagaagc taaatgcaac tagttcatct gaaggcagca cggttgatat 300
tggagctccc gccgaggagg aacagcctga ggttgaacct gaggaatccc ttgaacctga 360
agcctgtttt acagaagnnn nnnnnnaagc aaaacaataa catatgtggt cttgagtatc 420
ctctttttcta cccatttttt cctattttatt taaatgtctg tttatttgtc taccatctag 480
ttcatctatc tatctgtatc tatctatcta tctatctatc tagtaatcat ctatacctat 540
ccaacaactg tacattttatt tgtttttttt ttttgcattt gctgtttgaa aaaaaatgca 600
acgtttttaa ggcaa                                                    615

```

<210> 56
 <211> 400
 <212> DNA
 <213> Homo sapiens

```

<400> 56
gatagctttt gtaagcggaa gctatcttaa aaattaatgt tatttacaat gtattatcag 60

```

```

gtaataatgt aaatgaatct cccaccaaca caaatatacc taatcaaaga gtaatttttt 120
gtcttcattt ttttcccaca tatttttagac tgtgtacgga agttcaagtg ttgtcagata 180
agcatagaag aaggcaaagg gaaactctgg tgggaatttga ggaaaacatg ctataagata 240
gtggagcaca attggttcga aaccttcatt gtcttcattga ttctgctgag cagtggggct 300
ctggtagggt atgcatgac cactccttca cctttcatct gaaatctttt ccctttccct 360
tcaatcaact catattacc acttttaaat taagggtgtt 400

```

```

<210> 57
<211> 560
<212> DNA
<213> Homo sapiens

```

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<400> 57
aaattactga aacccttggg tgactgaaat gccagtcag cagtcattta tgatcagata 60
atgataaagt aaaattcagc catgggaaac attaaacctt ccagccttag gcacctgata 120
agagcttgca tcgtttcctt ttttaagaaa tcatcaatta gagactgttt ctgatacata 180
aatttaatag aatttttttga cttacaggcc tttgaagata tatacattga gcagcgaaaa 240
accattaaga ccatgttaga atatgctgac aaggttttca cttacatatt cattctggaa 300
atgctgctaa agtgggttgc atatggtttt caagtgtatt ttaccaatgc ctggtgctgg 360
ctagacttcc tgattgttga tgtgagtatg ctgcactttg ctgctttatt cattggcata 420
tatgtaatag ttctagcaat ggtgcctgac acagtgtagg cactcagtaa cactgtatca 480
gcccaatat aaattatgtt tctcatttca cagtgaagg atgcctcaaa acatttttta 540
ccaatttaaa tacatatata 560

```

```

<210> 58
<211> 480
<212> DNA
<213> Homo sapiens

```

```

<400> 58
aaattcttag gcctttcccc aaacttacta agtcagaact tgctattggt gtttttaaca 60
agacccctgg gtgattttga aactcatgaa agttcgagaa ttactgattc attgcataga 120
gcaaggctga actgtgtaga catttttata tgtaaataag aaaattgtgt tgctttttct 180
gtataggctc cactgggttag cttaactgca aatgccttgg gttactcaga acttgggtgcc 240
atcaaattccc tcagaacact aagagctctg aggccactga gagctttgtc ccggtttgaa 300
ggaatgaggg taagactgaa tgccttagag tttgtcagaa ttattattga gagcagactg 360
acactttgta ccatggaaat gtcaaattta tggagaattt gtgtcttaca cattcatact 420
gacatagcta atcaatcaaa aataatattt accagatgcc cataataactt ggcactgctg 480

```

```

<210> 59
<211> 640
<212> DNA
<213> Homo sapiens

```

```

<400> 59
taattttaaa attcttagtt ggagctacca gagtctagtt tctacccaat attcaacttt 60
gaaacagatt tttttaatca tttgactgtt cttttaataa tgtttaaaaa taagtaaata 120
tttggtgttg gcttttctact tatttttctt tctcatcctg tgccagggtg ttgtaaattgc 180
tcttttagga gccattccat ctatcatgaa tgtacttctg gtttgtctga tcttttggct 240
aatattcagt atcatgggag tgaatctctt tgctggcaag ttttaccatt gtattaatta 300
caccactgga gagatgtttg atgtaagcgt ggtcaacaac tacagtgagt gcaaagctct 360
cattgagagc aatcaaaactg ccagggtggaa aaatgtgaaa gtaaactttg ataacgtagg 420
acttgatat ctgtctctac ttcaagtagt aagtaatcac tttattattt tccatgatgt 480
gtaattaaaa tgagtctaaa gtttttcttc ctcataatga gatatccacc tgtagaatg 540

```

gctattatca aacagataaa tgacaataaa tgctggcaag aatgtgaaga aaaggggaacc 600
 cttgtacatt gttggcaggg atgtaaatta gtatagcttt 640

<210> 60
 <211> 480
 <212> DNA
 <213> Homo sapiens

<400> 60
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 agcttattta tatgcctgta ttgaatacat gtcaaataga attttgatca attattcaat 120
 ttatttttcta aaattataat tttgggaaaa aagaaaatga tatgactttt cttacaggcc 180
 acgtttaagg gatggatgga tattatgtat gcagctgttg attcacgaaa tgtaagtcta 240
 gtttagagga aattgttttag tttgattaaa tgtatatatt tacaatattg taatttagtg 300
 atattgtcaa taaaataaaa ttatgtgctt aatttataaa acccatctat attataagga 360
 taaaatattt aatcatacta tttctttcaa aattatcata ggatgatatt ctctaatac 420
 tctgtatctt ttaacatatc ttttctagta tttagcaagg cacctgacac aaaactttat 480

<210> 61
 <211> 366
 <212> DNA
 <213> Homo sapiens

<400> 61
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 tataatgggtt acaattcttc atattcttta ggtagaatta caaccgaagt atgaagacaa 120
 cctgtacatg tatctttatt ttgtcatctt tattattttt gggtcattct ttaccttgaa 180
 tcttttcatg ggtgtcatca tagataactt caaccaacag aaaaagaaga taagtatatt 240
 aaaacttcat ccttgctctg aaatatgaac taaatatttc atactctttc ctttagcctc 300
 caaaatgcaa tcaccaaaaa aagaatataa aattcagaaa ttattttgag acatttgata 360
 atcgat 366

<210> 62
 <211> 560
 <212> DNA
 <213> Homo sapiens

<400> 62
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 aaatatgact aatatggcat aatttatata ttgaataaag gcatctctat aaatacagat 120
 attagtaaca atagaatgaa atgtgggagc caattttcac atgattacta aggtggattt 180
 tatagccagc aaagaacaca attttaacaa gtgttgcttt catttcttta ctttggagggt 240
 caagacattt ttatgacaga agaacagaag aaataactaca atgcaatgaa aaaactgggt 300
 tcaaagaaac cacaaaaacc catacctcga cctgctgtaa gaataacata ttttcattgc 360
 ctgttaaaac tatattacct aaccgtttca cagcccgaat ttctagaaac tagttatttt 420
 tgtggatttg taacacaaag ttttttacct taacaatggg actagctagc ctaaataagct 480
 tgaaaaatgt actttacata tataatatgt ataaattata taatgcataa catattttat 540
 atgtaaacat ataaaataca 560

<210> 63
 <211> 650
 <212> DNA
 <213> Homo sapiens

<400> 63
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 aaagctacat tttttgttgc tttcttaaaa tcagaagaat tgaattcgat tttttttaag 120
 gtttctaata gaactttttac atattatttg ttccagaaca aattccaagg aatggtcttt 180
 gattttgtaa ccaaacaagt ctttgatata agcatcatga tcctcatctg ccttaacatg 240
 gtcaccatga tgggtgaaac cgatgaccag agtcaagaaa tgacaaacat tctgtactgg 300
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 cgttactact atttcactat tggatggaat atttttgatt ttgtgggtgg cattctctcc 420
 attgtaggta agaagagggt cttttattca gttaaggaat atagtggtaa aaatatgtgt 480
 tttaaaactt tagagggtgt tttcactaat ctttctcatt catcccaaac tcccaaataa 540
 aaatctaata gtccattggt ttagtttttag tttgccattt ctctaattgc atgctgtgct 600
 tgaaatgatg agtgggaatac aaggaattta tattttcagc tttcatttat 650

<210> 64
 <211> 3700
 <212> DNA
 <213> Homo sapiens

<400> 64
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 actttcattt gctactatta agtataacaa tatttttggt atttgttgat tttctacagg 180
 aatgtttctg gctgaactga tagaaaagta ttttggtgcc cctacctgt tccgagtgat 240
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cagttacagc	aaaatacttt	gtgtttcaca	agcaacaata	aatgtagatt	ctttatactg	3480
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attgttgtct	ttgtttctat	ctttgaaatg	ccatttaaag	gtagatttct	atcatgtaaa	3660
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<210> 65
 <211> 9112
 <212> DNA
 <213> Homo sapiens

<400> 65						
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tctctttgtt	ttcttatcca	cagagaaaga	aagaaaaaaa	attgtaacta	atttgtaaac	120
ctctgtggtc	aaaaaaaaaa	aaaaaaaaaa	aagctgaaca	gctgcagagg	aagacacgtt	180
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atcagagatt	atggagcaag	aaaactgaag	ccaagccaca	tcaagggttg	acagggatga	300
gatacctgtc	aaggattcat	agtagagtgg	cttactggga	aaggagcaaa	gaatctcttc	360
tagggatatt	gtaagaataa	atgagataat	tcacagaagg	gacctggagc	ttttccggaa	420
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gctacacgta	attaaatgtg	caggatgaaa	agatggcaca	ggcactgttg	gtacccccag	660
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ttatagtaat	gaataaagga	aaggcaattt	cccgatccag	tgccacctct	gccttgata	960
ttttaactcc	actaaaccct	gttaggaaaa	ttgctabsaa	gattttggta	cattctttat	1020
tcagcatgct	tatcatgtgc	actattttga	ccaactgtgt	atztatgacc	ttgagcaacc	1080
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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
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 Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
 65 70 75 80
 Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
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 Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
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 Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
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 Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
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 Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
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 Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
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 Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Asp
 195 200 205
 Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
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 Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
 245 250 255
 Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
 260 265 270
 Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
 275 280 285
 Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
 290 295 300
 Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
 305 310 315 320
 Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
 325 330 335
 Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
 340 345 350
 Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
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 Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
 370 375 380
 Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr
 385 390 395 400
 Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
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 Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
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 Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
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 Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
 465 470 475 480
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 485 490 495
 Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
 500 505 510
 Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
 515 520 525
 Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
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Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
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Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
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Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
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Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
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Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
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Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
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Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
 645 650 655

Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
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Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
 675 680 685

Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
 690 695 700

Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
 705 710 715 720

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
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Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
 740 745 750

Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
 755 760 765

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
 770 775 780

Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
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Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
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Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
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Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
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Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
850 855 860
Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
865 870 875 880
Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
885 890 895
Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
900 905 910
Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
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Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
930 935 940
Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
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Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
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980 985 990
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Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser Gly
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Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr Val Pro Ile
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Thr Glu Gly Cys Ile Lys Lys Phe Pro Phe Cys Gln Val Ser Thr Glu
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Glu Gly Lys Gly Lys Ile Trp Trp Asn Leu Arg Lys Thr Cys Tyr Ser
1140 1145 1150

Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu
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 Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr
 1185 1190 1195 1200
 Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Phe Gln
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 Thr Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp
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 1265 1270 1275 1280
 Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys Leu Ile Phe
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 Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe
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 Tyr His Cys Val Asn Met Thr Thr Gly Asn Met Phe Asp Ile Ser Asp
 1315 1320 1325
 Val Asn Asn Leu Ser Asp Cys Gln Ala Leu Gly Lys Gln Ala Arg Trp
 1330 1335 1340
 Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Ala Gly Tyr Leu Ala
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 Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala
 1365 1370 1375
 Ala Val Asp Ser Arg Asp Val Lys Leu Gln Pro Val Tyr Glu Glu Asn
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 Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe
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 Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
 1410 1415 1420
 Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln
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 Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln
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Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val Phe Asp
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 Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys
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 1490 1495 1500
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 Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His Tyr Tyr Phe
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 Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys Tyr Phe Val Ser Pro
 1555 1560 1565
 Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg
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 Lys Glu Ala Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn
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 Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly
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 1665 1670 1675 1680
 Thr Ile His Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser
 1685 1690 1695
 Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val
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 Val Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
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 1730 1735 1740
 Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu
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Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro Pro Leu Leu
1765 1770 1775

Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met
1780 1785 1790

Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr
1795 1800 1805

Lys Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
1810 1815 1820

Met Glu Asp Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Glu
1825 1830 1835 1840

Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Ala
1845 1850 1855

Ile Ile Gln Arg Asn Phe Arg Cys Tyr Leu Leu Lys Gln Arg Leu Lys
1860 1865 1870

Asn Ile Ser Ser Asn Tyr Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp
1875 1880 1885

Leu Pro Ile Lys Gln Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser
1890 1895 1900

Thr Pro Glu Lys Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser
1905 1910 1915 1920

Tyr Asp Ser Val Thr Lys Pro Asp Lys Glu Lys Phe Glu Lys Asp Lys
1925 1930 1935

Pro Glu Lys Glu Ser Lys Gly Lys Glu Val Arg Glu Asn Gln Lys
1940 1945 1950

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<211> 1951

<212> PRT

<213> Homo sapiens

<400> 68

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Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
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Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
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Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
 130 135 140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
 180 185 190

Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Ser
 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
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Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
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Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
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Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
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Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
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Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
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Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
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Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
 340 345 350

Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
 355 360 365

Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
 370 375 380

Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr
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 Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
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 485 490 495
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 Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
 625 630 635 640
 Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
 645 650 655
 Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
 660 665 670
 Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
 675 680 685

Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
 690 695 700

Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
 705 710 715 720

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
 725 730 735

Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
 740 745 750

Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
 755 760 765

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
 770 775 780

Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
 785 790 795 800

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
 805 810 815

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
 820 825 830

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
 835 840 845

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
 850 855 860

Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
 865 870 875 880

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
 885 890 895

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
 900 905 910

Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
 915 920 925

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
 930 935 940

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
 945 950 955 960

Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
 965 970 975

Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
 980 985 990

Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
 995 1000 1005

Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser Gly
 1010 1015 1020

Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val Ile Asp Glu Asn Asp
 1025 1030 1035 1040

Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr Val Pro Ile
 1045 1050 1055

Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser
 1060 1065 1070

Ser Glu Ser Glu Leu Glu Glu Ser Lys Glu Lys Leu Asn Ala Thr Ser
 1075 1080 1085

Ser Ser Glu Gly Ser Thr Val Asp Val Val Leu Pro Arg Glu Gly Glu
 1090 1095 1100

Gln Ala Glu Thr Glu Pro Glu Glu Asp Leu Lys Pro Glu Ala Cys Phe
 1105 1110 1115 1120

Thr Glu Gly Cys Ile Lys Lys Phe Pro Phe Cys Gln Val Ser Thr Glu
 1125 1130 1135

Glu Gly Lys Gly Lys Ile Trp Trp Asn Leu Arg Lys Thr Cys Tyr Ser
 1140 1145 1150

Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu
 1155 1160 1165

Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Glu Gln Arg
 1170 1175 1180

Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr
 1185 1190 1195 1200

Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Phe Gln
 1205 1210 1215

Thr Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp
 1220 1225 1230

Val Ser Leu Val Ser Leu Val Ala Asn Ala Leu Gly Tyr Ser Glu Leu
 1235 1240 1245

Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro Leu Arg
 1250 1255 1260

Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Val Asn Ala Leu Val
 1265 1270 1275 1280

Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys Leu Ile Phe
 1285 1290 1295

Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe
 1300 1305 1310

Tyr His Cys Val Asn Met Thr Thr Gly Asn Met Phe Asp Ile Ser Asp
 1315 1320 1325

Val Asn Asn Leu Ser Asp Cys Gln Ala Leu Gly Lys Gln Ala Arg Trp
 1330 1335 1340

Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Ala Gly Tyr Leu Ala
 1345 1350 1355 1360

Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala
 1365 1370 1375

Ala Val Asp Ser Arg Asp Val Lys Leu Gln Pro Val Tyr Glu Glu Asn
 1380 1385 1390

Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe
 1395 1400 1405

Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
 1410 1415 1420

Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln
 1425 1430 1435 1440

Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln
 1445 1450 1455

Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val Phe Asp
 1460 1465 1470

Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys
 1475 1480 1485

Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Gly Lys Tyr
 1490 1495 1500

Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val Phe Ile Val Leu Phe
 1505 1510 1515 1520

Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His Tyr Tyr Phe
 1525 1530 1535

Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu Ser Ile
 1540 1545 1550

Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys Tyr Phe Val Ser Pro
 1555 1560 1565

Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg
 1570 1575 1580

Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met
 1585 1590 1595 1600

Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val
 1605 1610 1615

Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys
 1620 1625 1630

Lys Glu Ala Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn
 1635 1640 1645

Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly
 1650 1655 1660

Leu Leu Ala Pro Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp
 1665 1670 1675 1680

Thr Ile His Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser
 1685 1690 1695

Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val
 1700 1705 1710

Val Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
 1715 1720 1725

Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met Phe
 1730 1735 1740

Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu
 1745 1750 1755 1760

Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro Pro Leu Leu
 1765 1770 1775

Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met
 1780 1785 1790

Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr
 1795 1800 1805

Lys Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
 1810 1815 1820

Met Glu Asp Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Glu
 1825 1830 1835 1840

Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Ala
 1845 1850 1855

Ile Ile Gln Arg Asn Phe Arg Cys Tyr Leu Leu Lys Gln Arg Leu Lys
 1860 1865 1870

Asn Ile Ser Ser Asn Tyr Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp
 1875 1880 1885

Leu Pro Ile Lys Gln Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser
 1890 1895 1900

Thr Pro Glu Lys Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser
 1905 1910 1915 1920

Tyr Asp Ser Val Thr Lys Pro Asp Lys Glu Lys Phe Glu Lys Asp Lys
 1925 1930 1935

Pro Glu Lys Glu Ser Lys Gly Lys Glu Val Arg Glu Asn Gln Lys
 1940 1945 1950

<210> 69
 <211> 1380
 <212> DNA
 <213> Homo sapiens

<400> 69
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 gatatgaaag gtcagatgaa acaataacat acatctggat tgagaaatat cttaataact 120
 gatggattat ttttattttc tttatgtatt gtgtgcttca atatcctaataa aaataatatt 180
 agctagggttc actgatgtat agaatctttt tctacattta gatatttctt gcaaagtgtt 240
 taccagaaaag caacacaaaa atactatcag tgagtatgtg tttacactgt tctctaagga 300
 gtcaaattcc tcaccttgaa aataattcat cccaggaaga gaaaagggtt tcaaaagact 360
 agagcaggcc acaaggggagc tttcgcaaaa ctctacacgt aaagggtaat gttaaacttaa 420
 aacctatttt tcaaacagta atttatatat cttttaattt tagtagttta tgtgtgaaac 480
 aatcatgcaa aacaacaaag tgataaaatt ttttaaaaaa attagtgaaga tgcaaataac 540
 tgaatatgta aaagggtctca tacatatatta tatgtagtag ataagttaca tttttttagt 600
 gtgttgggaa attttagctc acatcacctc tctactgtca tcttggggca ctttcatgac 660
 taccatgctc tcatgcagggt ttacttttct cctgtgaca gaggataatg ggaatgtttt 720
 ttctttggct caattttgtg tgtgtccgac agtagatggc gtaccacttt gagtgcgac 780
 ggcttttttt tcttttcttt tttttttctt caaagctgtt ttctgatata tgttgggtac 840
 catagagtga atctcagaac aggaagcgga ggcataagca gagaggattc tggaaagggtc 900
 tctttgtttt cttatccaca gagaaagaaa gaaaaaaaat tgtaactaat ttgtaaacct 960
 ctgtgggtcaa aaaaaaaaaa aaaaaaaaaa gctgaacagc tgcagaggaa gacacgttat 1020
 accctaacca tcttggatgc tgggctttgt tatgctgtaa ttcataaggc tctgttttat 1080
 caggtaagct gacaaaacat ttcattatct gcaccataga acctagctac caggtcattt 1140
 tccttacttt aaaatcatct tcatgctgct atttttaacc cagtgttgtt taaatgtaaa 1200
 ttacaggaac caaaggcatc gtttgatgtg taaactgctt actatttctt tatctttcaa 1260
 agaaaataga gcctgtctgg aaatggtgat ttatggtaca tactaggcat caatggtctt 1320
 gtgtttttgt agatgcttat gattaattgt attcagaaaa aatatttttt attatactta 1380

<210> 70
 <211> 840
 <212> DNA
 <213> Homo sapiens

<400> 70
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 aaggctgcca aagaaggggg agcacccttg tcccaaccct aggatcctgg cagtgggttc 120
 tgggtccatt cttcctaaat catgctaggg catgctttta acaaggggtca aatatcttgc 180
 tttgcatcat ccttgctttc tcgatccagg gccataaaaa aaaaagggaat aaaaccaga 240
 cacagagcca gagcaccctt atgccaatg tcaaagatta taggctaatt tcacctgtat 300
 tctctttcta cagagattat ggagcaagaa aactgaagcc aagccacatc aagggttgac 360
 agggatgaga tacctgtcaa ggattcatag tagagtggct tactgggaaa ggagcaaaga 420
 atctcttcta gggatattgt aagaataaat gagataattc acagaaggga cctggagctt 480
 ttccggaaaa aggtgctgtg actatctaag gtaactaaac aacttctggg tataagtttg 540

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tttttgtgga aaataaacta aaatctctac tatttaacaa ggacagctgt atcaggacca 600
aaagaaggca gaggggtggt ttcttccttc ctctaccagt ttgttcttcc aaagaggcaa 660
atacatagag ggagacatag cacagatgac cttaggggaat ggaatgatgc caaaggctgt 720
tgatgtaaga aagagagatt aactcagttt tttttttgtt tttgtttttt tgttgttgtt 780
gttgttgttt tgagacagag tctctctctg tcgcccaggc tggagtgcag tggcatgaac 840

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<210> 71
<211> 780
<212> DNA
<213> Homo sapiens

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<400> 71
gatatattaa attttatgta ttttaataaa ttataatgtg catataatca ttaataatat 60
atatattcca caccaaggca tcagtaagaa ttaattttta aagtctgctc taatgtgaat 120
ataaaattat gtaagaactc tgtataataa gctcacagag tacaagaaag gagaggaaaa 180
aagtaaaaaga gaactgcgaa agaactatga gggatttcca aacagcaaaa ttgtcattga 240
agccatgaga aactctactc actaaattct ttaatttctc agcctaccca aatattgggc 300
aaaccctaatt tctcttgcag gggaaaagct gagagtctgg aactagccta tcttccgagg 360
acttagagac aacagtatgg gaatttcaac gagacgtttt tactttcttt tgaccaagat 420
tcaaatttctt tattccagcc cttgataagt aaataagaag gtaaaggact atttatttgt 480
aaaaagtttt tcatgatttt gtgatggcac cttgttccat atcatctcag ataaatcaga 540
ataatttgtg aaaattactc ggtgatttcc acattagata ttttaaacct aatgttattt 600
ctaaaacaaa aaccaaccag gagaatccaa ttaagtaaaa tgtatgtatt aatataaatt 660
agctattccc atctggaaaa gggcagccat ttctgtgttg aggtgcctca atgatactga 720
ggctgagaca ggttagatga tacaggcata ccattagcag cagactcaat actaaccag 780

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<210> 72
<211> 1025
<212> DNA
<213> Homo sapiens

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<400> 72
acaaagtatt gaaaaggcgg ggggcaggat gcagaataat taagcaattt tattgacaaa 60
ctthactggc attactcttt tgctgaaagt atactatatt ttggcttaca gtgtcaaaac 120
agaatttttt aaatgctttt aaaaaatgga caaaattata gatattcttg agtttaaata 180
taatgtttat atattatata tactgtacat tgtagaatgg ctaaatcaaa ctaattaaca 240
ttaagtacag acttttgata gatttatgaa cttggcttat tgagaatgag gttgaatgat 300
gatgttttca agttcaaagt tgtagtgcag tactaaaagc atgacttaat gtttatagct 360
ttaaaaagtt actaaagaat gacatttttg ttgatgttct tatgccaat cgcttgcttt 420
cctaactctt gtgcaatttt tctttttatt gcaggtaatt cgtatgcaag aagctacacg 480
taattaaatg tgcaggatga aaagatggca caggcactgt tggtagcccc aggacctgaa 540
agcttccgcc tttttactag agaatctctt gctgctatcg aaaaacgtgc tgcagaagag 600
aaagccaaga agcccaaaaa ggaacaagat aatgatgatg agaacaaacc aaagccaaat 660
agtgacttgg aagctggaaa gaaccttcca tttatttatg gagacattcc tccagagatg 720
gtgtcagagc ccctggagga cctggatccc tactatatca ataagaaagt gagtattgat 780
tttagacttc taataaatct ttaatgaaac tcttaactgt aatatacttt tctgggcctt 840
atatacagca tcacaatttt tcttctgtta aagattttat aatactcttc actgtcactt 900
atttttatca caatataata aaacaaacat ttataagaaa tgaagtcaag agttgggttac 960
agtcaggaaa tatgaataga tgaatgattt ctacaatttc acagtgataa ttcagatagt 1020
caaaa 1025

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<210> 73
<211> 433
<212> DNA

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<213> Homo sapiens

<400> 73

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tgtaacyata tgtaatttta aacatctaac atgtttgtag ttatgatata tcaactgggt 60
taacaaacc agtttgaaca aacaaattcy attttttaaa aaggtcctca tgtatgtaag 120
ctccttaaat aagcccatgt ctaatttagt aattttactc gtattttctg tttcagactt 180
ttatagtaat gaataaagga aaggcaattt cccgattcag tgccacctct gccttgata 240
ttttaactcc actaaaccct gttaggaaaa ttgctabsaa gattttggta cattcatatc 300
cttttaaatgt gaattgccta aatgctattt ctaacagttg attttaaaga aaatgtcagt 360
tatattttca agtatctgta aaatttcttt gagattaatg gtaacattgt tagtttaatt 420
catttatttg cat 433
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<210> 74

<211> 450

<212> DNA

<213> Homo sapiens

<400> 74

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gagtgcacca aggccatata acaggctttg aagtttctta ttattttatc attgttttaa 60
aacaataaat attaatttca cagtttttgc atcgataaac ttttttggt gttttggatc 120
atttataaat ggccatggta acctactaac atttattcct taactataat ctactttatt 180
cagcatgctt atcatgtgca ctattttgac caactgtgta tttatgacct tgagcaaccc 240
tcctgactgg acaagaatg tagagtaagt aggaataact tctgggaatg agaaatgcac 300
actcaaattc tctagcaatc tccttggtgg tatagcctga cttatggttt ccacttctgt 360
ctaagaaaag ttattttcat aatatgcagc cggtaaggga ggtctttcgg gggagctatt 420
cttctacgag gtaagtattt tcccacaaaa 450
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<210> 75

<211> 701

<212> DNA

<213> Homo sapiens

<400> 75

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aaaatttacc atttgyggct ttccattaca tttctatcag ataactctgc gctagtaggt 60
caaactagat gattatccat aagatacatg aaactattat tctaaaaccc aaatagttaa 120
accagattag attcctaaag aatatatttt ctcttcagtt taactctttg ctcaggcttg 180
taaaactaac taaatgaata gattatttgg taaatagaag taaggaacaa tattttaatg 240
aattgaaaaa ccacaaaagg ataggatttg ctatgattga aaacatttat ttttaacagt 300
caagcaaaat tgtaattttt ggcttggatg tttttcctag gtacacattc actggaatct 360
atacctttga gtcacttata aaaatcttgg caagagggtt ttgcttagaa gattttacgt 420
ttcttcgtga tccatggaac tggctggatt tcagtgtcat tgtgatggcg tgagtaactt 480
tgaaaatttg ataagcgcaa aggagtgaat atagtcatag tacaacaag gtcttttgtt 540
catatattaa atgtagagct ttcttgtag tcaagttaac tatatgggtt gtgtattttc 600
agaatacata ttagaataca tattgcaatg taaatatatc cagtaaata tcaataaatg 660
gggttatctt catgtcatat agtctttctc ttcacaaaa t 701
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<210> 76

<211> 286

<212> DNA

<213> Homo sapiens

<400> 76

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atttgtaaata ctacagggc tctatgtgcc aaaccagca ttaagtcctt atttagtata 60
aactttgccaa aaactatcag taactctgat ttaattctgc aggtatgtaa cagaatttgt 120
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aagcctaggc aatgtttcag cccttcgaac tttcagagtc ttgagagctc tgaaaaactat 180
ttctgtaatc ccaggtaaga agaaactggg gtaaggtagt aggcccctta tatctccaac 240
ttttcttggtg tggtattgtg tttgtgtgtg aactccccta ttacag 286

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<210> 77
<211> 515
<212> DNA
<213> Homo sapiens

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<400> 77
gtaagaagaa actggtgtaa ggtagtaggc cccttatatc tccaactttt cttgtgtgtt 60
attgtgtttg tgtgtgaact cccctattac agatatgtga cagagtttgt ggacctgggc 120
aatgtctcag cggtgagaac attcagagtt ctccgagcac tgaaaacaat ttcagtcatt 180
ccagggtgaga gctagggttaa acaccgaggt tgactttaat tattgagttt gaaatcaatt 240
tatatgactt acagcattag ccttggttgct tattattaca gttcatcccc gtaaataatg 300
ccaaatgatg tttcaatgtc agtttagctc ctaaaatttt ataaattaca tgcgtattta 360
taaagtcagc ctttgagttt aacagaaaat tgcagtagac atcttcaaaa aatgctaatt 420
tgggcctctt gcgctctctc tctctctttt tcactaccat ggctttacta acagatttgg 480
attttaccat tcgctgcaga tgtagttaa aaatg 515

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<210> 78
<211> 564
<212> DNA
<213> Homo sapiens

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<400> 78
aaacttcctg actagatatt taaaccttca tattgaattt ccagcaagca cactgttcat 60
gtgtaaaatc tgctgttcat ctatttccca aatcatcagg ctatccatac agctttgggtg 120
tctaaatagt caagcaatca tttatggggg aaagagaatg tgtgtgacta ttaagaaatc 180
atgatttctg gcactcttcc tcaggtaacc tatagttctc tctctgcagg tttaaagacc 240
attgtggggg ccctgatcca gtcggtaaag aagctttctg atgtgatgat cctgactgtg 300
ttctgtctga gcgtgtttgc tctcattggg ctgcagctgt tcatgggcaa tctgaggaat 360
aaatgtttgc agtggtttgc aagcgattct gcttttgaaa ccaacaccac ttcctacttt 420
aatggcaciaa tggattcaaa tgggacattt gttaatgtaa caatgagcac atttaactgg 480
aaggataaca ttggagatga cagtaagaag tattacatta tgtaaacctt agtgttgctg 540
aatgaatttt caactataaa tagt 564

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<210> 79
<211> 497
<212> DNA
<213> Homo sapiens

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<400> 79
tgagactgtg ggtgtacagc cacctttgta aataactgaa atagtccaac tctgatttat 60
tactaatact aatgtgaata ggattaatat gaaataaaat gggttttttt ttgtattaac 120
aggtcacttt tatgttttgg atggggcaaaa agacccttta ctctgtggaa atgggttcaga 180
tgcagggttaa gaaacataat atatatTTTT aagatataga actctttgcg aaaaaaaaaa 240
gtaggttagga aaacaactac atggttatat gtgtagcctt accatgtatg caataaagag 300
cagtgtgtct cccctaggaa gtgccttgct tgccttaccg gattgccact ggtcctaaac 360
tcacagcaat taaaaattat ccctttgtga agacctttcc ccaaaatttc acagttaaga 420
tgttcttaaa ttgatgtctc aatgtgtgaa ggcccagagt ctgtctttgc tgtacatcta 480
tcagagctgt taggaaa 497

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<210> 80
<211> 501
<212> DNA
<213> Homo sapiens

<400> 80
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tctaaatgtc trwaaawatt tatttgcac taaattttct atcggctctc ctagtgaatt 120
tcatctgata agtttcacgg tgggcaatca cctaaagtgt tctggaaatt aaagcaagat 180
aattcgtcac agatagcagc tttgggtttt gaaaattcct ataagtcaaa taaattgaaa 240
ttgctgtaat ttctaaactg accctacctc catttctctc tcttatagcc agtgtccaga 300
aggatacatc tgtgtgaagg ctggtcgaaa cccaactat ggctacacaa gctttgacac 360
ctttagctgg gctttcctgt ctctatttcg actcatgact caagactact gggaaaatct 420
ttaccagttg gtaagggtcca aatgagcatg cataacattt atttttatag acatgtatga 480
aatgaaaagc ataggctgag t 501

<210> 81
<211> 432
<212> DNA
<213> Homo sapiens

<400> 81
agctaattag tctactgact atctaactgt ggtaatcaga tatttatttg gggacattat 60
actaaaatac tgatggaatt atccccatt tcccctagac attacgtgct gctgggaaaa 120
catacatgat attttttgct ctggtcattt tcttgggctc attttatttg gtgaatttga 180
tcttggtgtg ggtggccatg gcctatgagg ggcagaatca ggccaccttg gaagaagcag 240
aacaaaaaga ggccgaattt cagcagatgc tcgaacagct taaaaagcaa caggaagaag 300
ctcaggtact gagtgataaa mgcaaagatt tatcattatt attmttagtt tctaagtaga 360
aatagtgtta tactatagag ggtagattgg aactgctttt tcattttata tatmggcatt 420
gtcattagac ac 432

<210> 82
<211> 489
<212> DNA
<213> Homo sapiens

<400> 82
tgcaactgt tttcaaagct ctgtgttcta aatagtgcct ggctttgttt tatgacaggc 60
agttgcgga gcatcagctg cttcaagaga tttcagtggg ataggtgggt taggagagct 120
gttggaaagt tcttcagaag catcaaagtt gagttccaaa agtgctaaaag aatggaggaa 180
ccgaaggaag aaaagaagac agagagagca ccttgaagga aacaacaaag gagagagaga 240
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tactaagtgc tctggtttct ttgtcattgc tattgctttt tagtttttgt attttgtttt 420
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<210> 83
<211> 653
<212> DNA
<213> Homo sapiens

<400> 83
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tttaataatta atatttatta aataattgag ttcttccctt acccccatcc cattcctttc 240
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<210> 84
 <211> 566
 <212> DNA
 <213> Homo sapiens

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<400> 84
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tgcaaagaaa tgctatgttg tggtgtatta cttattggga agagtgggtt gagccatcag 180
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ccagcattct gaccaacaca atggaaggta agagcaggtc atggaacagc caactttctg 360
tgattatgtg ctttgtgaac tattccttct tttcatagaa ttactgaagt ctgttacctc 420
gatcgaacta tatatttagc ctaagaatgt gatatatggt gtacattatc acattgntta 480
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<210> 85
 <211> 748
 <212> DNA
 <213> Homo sapiens

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<400> 85
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aaataatgta aaatctacta gcaataataa ctcatTTTTt tggtatttta ctactcttcc 240
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gagagataga ccaaagggaa agatgtattt gtgctgtgtt gaacccaaaa atttatctct 600
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aaactcaact ggtatgaatg ctgattgttt aggccaatgt ctgtgctgat tgatcatggt 720
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<210> 86
 <211> 664
 <212> DNA
 <213> Homo sapiens

<400> 86

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agtgcgtatc	tctaattttt	taggtcttta	ctgggatttt	tacagcagaa	atggttctca	180
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tctgtaaaga	tacgcaaata	aaaatttaga	ccccagttaa	tttttagcttt	ttattaaccc	660
tact						664

<210> 87
 <211> 750
 <212> DNA
 <213> Homo sapiens

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ccacgtgtgg	ttctatgata	ccacatacta	ataaaaataat	gtctaaaatt	atattatgat	180
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ctcaccttgg	tgttgggccat	catcgtcttc	atttttgctg	tggtcggcat	gcagctcttt	360
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cacatgaacg	acttcttcca	ctccttcctg	attgtgttcc	gcgtgctgtg	tggagagtgg	480
atagagacca	tgtgggactg	tatggaggtc	gctggccaaa	ccatgtgcct	tattgttttc	540
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agaacaagag	cagacagtag	ctaggaacgt	ggccagatgt	agtaaacata	tctctggttt	660
atagtaagt	gcctagactg	aaatccccct	attagcactc	agagaataag	caagttattt	720
aacttctcct	gggctctggg	ttccccattt				750

<210> 88
 <211> 768
 <212> DNA
 <213> Homo sapiens

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agccaaaagt	tatagaaatc	catgaaggca	ataagataga	cagctgcatg	tccaataata	420
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gtgtaggtac	tgggaagcagt	gttgaaaaat	acgtaatcga	tgaaaatgat	tatatgtcat	540
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ggaatgcttt	taaatttttt	gttccatttc	ctatgataac	catgtactac	agttattttac	720
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<210> 89

<211> 471
<212> DNA
<213> Homo sapiens

<400> 89
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cttgttcttt acggagactg aatatgcctc atttaaaaaa aaaaatttag caaacgaggt 360
gtggtggctt atgcctgtaa ccccaaaatt ttgggaggct acggtaggag gattgcttga 420
ccccaggagt ttgagaccac cctgggaaat gtagtaaggc tttgcctcta c 471

<210> 90
<211> 623
<212> DNA
<213> Homo sapiens

<400> 90
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gagtggggaa ggggcaagaa agtttatttt ttcctattta agattaaaat atatttttta 180
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cagatgcaaa cactgagctt cagaatcaaa agaaaaggca tatctgtgtc ttgcagagct 480
tgccacccaa ggtttaacga tgcaaaattc agttctgaac aaatcagcac catgaaacag 540
ccagatggaa tttctcatct ggtgtttatc taacagatgt tttcctcact gagacaacca 600
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<210> 91
<211> 520
<212> DNA
<213> Homo sapiens

<400> 91
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ccattttaagt aaaataaaaat atttttgatt cataggcctt tgaagatata tacattgaac 180
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atgacataat tatgcagtta ttttaacaaa actgtaacat atgcaacaat gaggaatatc 480
tcatgggaaa gagtagagga ggtcctaaac atgggcagtg 520

<210> 92
<211> 595
<212> DNA
<213> Homo sapiens

<400> 92

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attgacacgt	gttgataaat	atgggcaagt	attctggttt	cattggttaa	aaaaaagcaa	180
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aaggtagtgc	caaattagta	tttagtctgc	attaaataga	taccacaccc	tataccttca	300
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gttagcctgg	tagccaatgc	tcttggctac	tcagaactcg	gtgccatcaa	atcattacgg	420
acattaagag	ctttaagacc	tctaagagcc	ttatcccggg	ttgaaggcat	gagggttaaga	480
agaatagaca	ctctaattat	tcatgtcaaa	aattacatgt	aggtaatgat	ttagatagaa	540
aagggtgcc	tactcttctg	atattttatt	caatagaaat	tacagaatta	gaagc	595

<210> 93
 <211> 787
 <212> DNA
 <213> Homo sapiens

<400> 93	
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tcaaggaaga	ttatttccct gatgttcttc gtttgaatga ctaacatttg acagcatgaa 660
aaaaagttaa	tgataacacc tataatatca gcttgaattg atcataaaaa agatgttaca 720
attattttat	aatgtatttt ccttagtggt aagcttttag tatgttttaa tgtgatttta 780
tatttct	

<210> 94
 <211> 438
 <212> DNA
 <213> Homo sapiens

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gtaattttaa	cactgataca tccaaaattc tatattagaa catttaatat tgcataataa 360
aaatgaacag	tctgcttcaa tatagatgat gcttgattaa tgtgtgccta atatacaata 420
tgtagcta	atgaaacg

<210> 95
 <211> 637
 <212> DNA
 <213> Homo sapiens

<400> 95	
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<210> 96
 <211> 637
 <212> DNA
 <213> Homo sapiens

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<400> 96
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catattttgc atcataattc acaacttctg cactcattag gagttaccac attccaaaaa 540
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<210> 97
 <211> 759
 <212> DNA
 <213> Homo sapiens

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<400> 97
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cgtatgtgga agggctttat ctacaatttt actgcattat tctttatgaa atatatatag 180
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<210> 98
 <211> 3975
 <212> DNA
 <213> Homo sapiens

<400> 98

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22

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23

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24

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22

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22

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21

<210> 364

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23

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21

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<210> 373
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 <400> 373
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<210> 374
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<210> 375
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<210> 381

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<210> 384

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<210> 385

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<210> 397
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<210> 398
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<400> 398
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<210> 399
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<400> 400
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<400> 401
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